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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,298	08/29/2001	Mehdi Tavassoli Kilani	3927P013	6646
8791	7590	05/17/2006		
BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES, CA 90025-1030			EXAMINER KIM, KEVIN	
			ART UNIT 2611	PAPER NUMBER

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/942,298	KILANI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kevin Y. Kim	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7,8,16,17,28 and 33 is/are allowed.
- 6) ☒ Claim(s) 1,2,6,9-11,15,18-20,23-25,29,34 and 36 is/are rejected.
- 7) ☒ Claim(s) 3-5,12-14,21,22,26,27,30-32 and 35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### *Claim Rejections - 35 USC § 102*

2. Claims 1,2,6,10,11,15,24,25,29 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Abe et al (US 5,987,075).

Claims 1, 10 and 24.

Abe et al discloses an apparatus comprising;

an estimating unit (110) to estimate a distribution of input signal envelope (see col. 13, lines 22-35) and

an integrator (111) to adjust a gain based upon the distribution for an automatic gain control (see col. 13, lines 36-54).

With respect to claim 24, a transmitter is inherent.

Claims 2, 6, 11, 15, 25, 29 and 34.

Abe et al discloses a comparator to compare the input signal against a threshold and a counter for counting occurrences in which the input signal envelope is either above or below the threshold within a given time. See col.3.

3. Claims 1, 2, 6, 10,11, 15, 24, 25, 29 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Kojima (US 5,659,582 previously cited).

Claim 1.

Kojima teaches an apparatus comprising (see Fig. 14);

an estimating unit (172, 150) to estimate a distribution of input signal envelope;

an integrator (130 note that the up-down counter may be viewed as an integrating means (see col. 23, line 58 or col. 24, line 17) to adjust a gain based upon the distribution for an automatic gain control (note that the output of 130 is used to control the variable gain amplifier 106 in Figs 1-5).

Claim 2.

The estimating unit, as disclosed by Kojima, comprises: a comparator (146, 148 in Fig. 14) to compare the input signal against one or more reference threshold values (upper threshold and lower threshold in Fig. 14), and a counter (150 in Fig. 14) to estimate the distribution by counting occurrences in which the input signal envelop is either above or below the one or more reference threshold values within a given period.

Claim 6.

The integrator of Kojima adjusts the gain based upon the occurrences counted during the given period (element 130 in Fig. 14 outputs the control signal based on the output of element 150 in Fig. 14, also see col. 16, lines 62-65).

Claim 10.

Kojima teaches a method comprising (see Fig. 14):

estimating a distribution of input signal envelope (172, 150), and adjusting a gain based upon the distribution for an automatic gain control (130 note that the output of 130 is used to control the variable gain amplifier 106 in Figs 1-5).

Claim 11.

Kojima teaches comparing the input signal envelope against one or more reference threshold values (146, 148), and estimating the distribution by counting occurrences in which the input signal envelope is either above or below the one or more reference threshold values within a given period (150).

Claim 15.

The integrator of Kojima adjusts the gain based upon the occurrences counted during the given period (element 130 in Fig. 14 outputs the control signal based on the output of element 150 in Fig. 14, also see col. 16, lines 62-65).

Claim 24.

Kojima teaches a communication system comprising;

a receiver (100 in Fig. 1) to receive the analog signal, the receiver including an automatic gain control unit (114, 106 in Fig. 1) to maintain a constant level of the analog signal for processing in the receiver, the automatic gain control unit including;

an estimating unit (172, 150 in Fig. 14) to estimate a distribution of input signal level', and an integrator (130 in Fig. 14, note that the up-down counter may be viewed as an integrating means, see col. 23, line 58 or col. 24, line 17) to adjust a gain based upon the distribution for the automatic gain control (note that the output of 130 is used to control the variable gain amplifier 106 in Figs 1-5). Also note that since the receiver receives the analog signal, it is inherent there is a transmitter to transmit an analog signal.

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## Claim 25.

The estimating unit of Kojima comprises a comparator (146, 148 in Fig. 14) to compare the input signal envelope against one or more reference threshold values; and a counter (150 in Fig. 14) to estimate the distribution by counting occurrences in which the input signal envelope is either above or below the one or more reference threshold values within a given period (col. 18, lines 20-28).

## Claim 29.

Kojima teaches an automatic gain control apparatus comprising: a comparator (146, 148 in Fig. 14) to compare input signal envelope against one or more reference threshold values', a counter (150 in Fig. 14) to count occurrences in which the input signal envelope is either above or below the one or more reference threshold values within a given period (col. 18, lines 20-28), and an integrator (130 in Fig. 14, note that the up-down counter may be viewed as an integrating means, see col. 23, line 58 or col. 24, line 17) to adjust a gain for automatic gain control, the gain adjusted based upon the occurrences counted (note that the output of 130 is used to control the variable gain amplifier 106 in Figs 1-5).

## Claim 34.

Kojima teaches a method for automatic gain control comprising: comparing input signal envelope against one or more reference threshold values (146, 148 in Fig. 14), counting occurrences in which the input signal envelope is either above or below the one or more reference threshold values within a given period (150 in Fig. 14), and adjusting a gain for

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automatic gain control based upon the occurrences counted (130 in Fig. 14, note that the output of 130 is used to control the variable gain amplifier 106 in Figs 1-5).

***Claim Rejections - 35 USC § 103***

4. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al (US 5,987,075) or Kojima in view of Scarpa (US 6,668,807 previously cited).

Abe et al and Kojima each discloses all the subject matter claimed except that the automatic gain control is executed instructions stored in a machine readable medium. Scarpa teaches an AGC implementation using software on a computer, i.e., "instructions stored in a machine readable medium." One well know advantage of software implementation is flexibility. Thus, it would have been obvious to one skilled in the art at the time the invention was made to implement the AGC method of Abe et al using instructions stored in a machine readable medium as taught by Scarpa.

5. Claims 9, 18, 23 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al or Kojima, as applied to claims 1,10,19 and 34 above, in view of Scarpa (US 5,563,916).

Abe et al and Kojima each discloses all the subject matter claimed except that a variable step size generator for the gain control. Scarpa teaches an AGC having a variable step size for the purpose of providing large gain for coarse adjustment and small gain for fine adjustment. Thus, it would have been obvious to one skilled in the art at the time the invention

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was made to provide a variable step generator for the AGC of Abe et al in order to providing varying speed for gain control depending on the characteristics of the input signal.

***Allowable Subject Matter***

6. Claims 3-5, 12-14, 21, 22, 26, 27, 30-32 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 7, 8, 16, 17, 28 and 33 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 10, 2006

KEVIN Y. KIM  
PATENT EXAMINER

